

ILLINOIS HIGHWAY INFORMATION SYSTEM

STRUCTURE INFORMATION AND PROCEDURE MANUAL

ITEM NAME **CONDITION RATINGS - GENERAL**

ITEM NO. **58-62**
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EFF. DATE **07/01/02**

Evaluation is based on the physical condition of the materials included in the deck, superstructure, substructure and culvert components. The condition evaluation of channels and channel protection is based on the natural elements in the channel. Condition ratings are intended to provide a basis for assessing the safety of in-service bridges and not as a direct determinant for bridge maintenance.

Condition ratings are used to describe existing, in-place bridge components as compared to their as-built conditions. These components include: Deck, Superstructure, Substructure, Channel and Channel Protection and Culverts. Typically, condition codes are properly used when they provide an overall characterization of the general condition of the entire component being rated. Conversely, they are improperly used if they attempt to describe localized or nominally occurring instances of deterioration or disrepair. However, the inspector should recognize, for locally occurring deficiencies as well as for general conditions, that the severity of a deficiency on a primary member is evaluated by how much that deficiency affects the load capacity of the overall structure. For example, if one web area of a multi-beam bridge was the only sign of deterioration, the superstructure rating would be based on the condition characterized by all of the beams. However, if the flange of one of the beams showed advanced section loss near midspan of the same bridge, which could affect the load capacity, the rating would be based on this severe condition.

The Bureau of Bridges and Structures or a Licensed Structural Engineer is to be notified to perform an evaluation of the load carrying capacity of the bridge when condition ratings warrant in accordance with the requirements of IDOT bridge rating policy. Condition ratings assigned during a Routine NBIS Inspection should take into account structural condition findings of a recent load rating evaluation, especially if that evaluation was performed since the last NBIS inspection. Inspection notes that outline these findings should be included with the structure information documents used by the inspector. However, the fact that a bridge was designed for less than current legal loads has no influence on condition ratings. Therefore, the load carrying capacity, in and of itself, is *not* to be used in evaluating condition items.

The condition evaluation of portions of bridges that are being supported, replaced or eliminated by temporary measures is based on their actual condition as if the temporary measures were not present. However, when a temporary member has been in place more than five (5) years, for the purposes of the NBIS inspection, it is considered as a permanent integral part of the structure and will be accounted for in the condition evaluation.

Bridge inspections should be accomplished using the *Bridge Inspector's Training Manual 90* and supplements and the most recent edition of the *AASHTO Manual for Condition Evaluation of Bridges* as reference. Findings of the NBIS Inspections must be recorded and coded on one of the two alternative forms, Bridge Inspection Report (MI) (Form BBS-BIR-1) or Bridge Inspection Report (SI) (Form BBS-BIR-2).

History is retained in the ISIS for each of these items based on each Inspection Date - Item 90.

CODE AND SCREEN ENTRY INSTRUCTIONS

The following general condition ratings should be used as the authoritative guide for assigning condition ratings when evaluating Items 58, 59, 60, 61 and 62. The specific component condition rating guides on the following pages, along with the *Bridge Inspector's Training Manual 90* or the *Culvert Inspection Manual*, may be used to assist the inspector in recognizing and evaluating deficiencies which may be present in decks, superstructures, substructures or culverts.

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<u>Code</u>	<u>Description</u>
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- | | |
|----------|--|
| N | Not Applicable |
| 9 | Excellent (New) Condition |
| 8 | Very Good Condition - No problems noted. |
| 7 | Good Condition - Some minor problems. |
| 6 | Satisfactory Condition - Structural elements show some minor deterioration. |
| 5 | Fair Condition - All primary structural elements are sound but may have minor section loss, cracking, spalling or scour. Inventory and operating ratings (Items 66 & 64) are not affected.* |
| 4 | Poor Condition - Advanced section loss, deterioration, spalling or scour; review of the structural condition will be required prior to the issuance of overload permits for structures where Item 59, 60 or 62 is coded "4". Such an appraisal for any of these items implies that the inventory and operating ratings (Items 66 & 64) are reduced even though weight limit posting may not be required.* |
| 3 | Serious Condition - Loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present; overload permits will not be allowed for structures where Item 59, 60 or 62 is coded "3" or less. Such an appraisal for any of these items implies that the load carrying capacity has been reduced to the point where a substantial truck load limit restriction is required.* |
| | Note: A description must be included in the "Inspection (Routine NBIS) Remarks" (Item 90B) concerning the reason for a rating of 3 or less. |
| 2 | Critical Condition - Advanced deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken. When a bridge component is appraised at this level, a special inspection of that component is required at intervals not to exceed 6 months.* |
| 1 | "Imminent" Failure Condition - Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement is affecting structure stability. Bridge is closed to traffic or temporary measures are in place to allow it to remain open but permanent corrective action may put it back in service. |
| 0 | Failed Condition - Out of service; beyond corrective action. |

- * Revising a condition rating to or from "2", "3" or "4" by the inspector indicates that a structural evaluation should be requested for a final determination of whether application or relaxation of loading restrictions is warranted. This evaluation must be performed by or reviewed by the Bureau of Bridges and Structures. The inspector should also be aware of a *load* rating performed within 5 years prior to the inspection and apply the condition ratings with due consideration of the findings of that evaluation.